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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/935,711	08/24/2001	Hisashi Okada	Q65953	9668

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SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037

EXAMINER

GARRETT, DAWN L

ART UNIT

PAPER NUMBER

1774

DATE MAILED: 07/30/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/935,711

Applicant(s)

OKADA ET AL.

Examiner

Dawn Garrett

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-7, 21, 22, 24, 27-30 and 32 is/are allowed.
- 6) ☒ Claim(s) 1-3, 8, 11-20, 23, 25, 26, 31, 33 and 34 is/are rejected.
- 7) ☒ Claim(s) 9 and 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This Office action is in response to the amendment, paper no. 8, received May 5, 2003. Claim 4 was cancelled. Claims 1 and 6 were amended. New claims 16-34 were added. Claims 1-3 and 5-34 are pending.
2. The rejection of claim 8 under 35 USC 102(e) as being anticipated by Hu et al. (US 6,057,048) set forth in paper no. 7, paragraph 3 is maintained.
3. With regard to the election of species, the species under consideration in paper no. 7 (mailed February 5, 2003) was formula E-1. Claim 9 which comprises formula E-1 as part of an EL device is now found to be allowable subject matter due to the amendment of independent claim 1 upon which claim 9 depends. Claim 1 requires as part of the heterocyclic compound a five membered ring according to formula (I). The light-emitting compounds by Hu et al. (see par. 4, paper no. 7) do not teach five membered rings according to formula (I). Accordingly, the rejection of claims 1-3, 11, and 13-15 under 35 USC 102(e) as being anticipated by Forrest et al. (US 6,310,360) is withdrawn due to the amendment of claim 1.
4. The rejection of claims 9, 10, and 12 under 35 USC 103(a) as being unpatentable over Forrest et al. (US 6,310,360) in view of Hu et al. (6,057,048) set forth in paper no. 7, paragraph 6, is withdrawn due to the amendment of claim 1.

Claim Objections

5. Claim 1 is objected to because of the following informalities: In the third line of claim 1, "layers" should be changed to "layer". Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 23, 25, 26, 31, 33, and 34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claims 23, 25, 31, 33, and 34 are indefinite because they depend upon themselves. It is unclear which independent claim these claims are intended to depend upon and accordingly, these claims have not been further treated on the merits.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-3 and 11-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forrest et al. (US 6,310,360) in view of (JP 8-78163). Forrest et al. discloses an electroluminescent device with an emissive layer comprising a host material such as a 4,4'-N,N'-dicarbazole-biphenyl (CBP) which has two heterocyclic groups (see col. 10, lines 40-48) and a phosphorescent sensitizer (see col. 9, lines 18-20) per the instant "phosphorescent compound". The phosphorescent compound may comprise iridium organometallic complexes as given in col. 15, lines 51-60 and col. 17, lines 18-64 per the instant organic metal complex which is an ortho-metalated complex per claims 2, 3,

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11, and 13-15. The phosphorescence quantum yield requirement of instant claim 13 is deemed to be inherently met, because the iridium complex formula disclosed by Forrest is the same as claimed by applicant. Forrest et al. teaches a light emissive layer comprising a host material, fluorescent material, and phosphorescent organometallic complex, but fails to teach the host material is the specific formula (I) of instant claim 1. Forrest does teach that "The invention will work with other molecules known by one of ordinary skill to work as hosts of emissive layers of OLEDs" (see col. 18, lines 65-67). JP 8-78163 teaches, in analogous art, organic layers comprising as host materials compounds comprising five membered nitrogen containing rings (i.e., formulas 7 and 8, par. 32; see entire patent). It would have been obvious to one of ordinary skill in the art to have used the JP 8-78163 host material in the Forrest et al. emissive layer as the host material, because JP 8-78163 teaches five membered nitrogen ring containing compounds are well suited as light emissive host materials and Forrest et al. teach known hosts of emissive layers are suitable to the invention. Per instant claim 12, polymers in a light emitting layer are well known in the art and are taught by JP 8-78163 (see par. 5).

Allowable Subject Matter

11. Claims 9 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The formula of claim 9 in combination with the requirements of independent claim 1 is not taught in the prior art of record.

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12. Claims 5-7, 21, 22, 24, 27-30 and 32 are allowed. The formulas of independent claims 5 and 6 are not taught in the prior art of record.

Response to Arguments

13. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

With regard to the rejection of claim 8 over Hu et al., the arguments have not been found persuasive. Applicant has not amended claim 8 and the rejection as set forth previously is respectfully maintained.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dawn Garrett whose telephone number is (703) 305-0788. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on (703) 308-0449. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-2351.

CYNTHIA H. KELLY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700


D.G.

July 25, 2003

